



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
Metropolitan Boston – Northeast Regional Office

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Lieutenant Governor

ELLEN ROY HERZFELDER  
Secretary

EDWARD P. KUNCE  
Acting Commissioner

**MODIFIED WATER WITHDRAWAL PERMIT**  
**MGL c 21G**

This Modified Permit is issued pursuant to the Massachusetts Water Management Act ("the Act") for the sole purpose of modifying the terms and conditions governing the withdrawal of water authorized herein. This Modified Permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

**PERMIT NUMBER:** 9P-3-17-298.01

**RIVER BASIN:** Ipswich

**PERMITTEE:** Town of Topsfield  
Town Hall  
8 West Common Street  
Topsfield, MA 01983

**ORIGINAL ISSUANCE DATE:** July 31, 1991

**MODIFICATION DATE:** May 19, 2003

**EXPIRATION DATE:** August 31, 2009

**NUMBER OF WITHDRAWAL POINTS:**

Groundwater: 1  
Surface Water: 0

**USE:** Public Water Supply

**DAYS OF OPERATION:** 365

**LOCATION:**

<u>Source</u>	<u>Source Code</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>
North St. Well	3298000-01G			4 Pump House Lane

This information is available in alternate format. Call Aprel McCabe, ADA Coordinator at 1-617-556-1171.

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## **SPECIAL CONDITIONS**

### **1. Maximum Authorized Annual Average Withdrawal Volume**

This Modified Permit authorizes the withdrawal of water, for the purpose of serving the businesses, municipal facilities, institutions and residences in the Town of Topsfield (the “Town” or “Topsfield”) at the rate described below on average over a calendar year. The volume reflected by this rate is in addition to the 0.43 million gallons per day (MGD) previously registered to the permittee through the Water Management Act Program. The Department of Environmental Protection (the “Department” or “DEP”) will use raw water volumes when assessing compliance with the volumes authorized by the Town’s Registration and this Modified Permit.

The permitted volume is expressed in millions of gallons, both as an average daily withdrawal rate per year, and as a total annual withdrawal volume for each period of the Modified Permit term.

Withdrawals are authorized as follows:

			<u>Daily Average (MGD)</u>	<u>Total Annual (MGY)</u>
Period One				
Years 2-5	7/31/1991	to 8/31/1994	0.17	62.05
Period Two				
Years 6-10	9/1/1994	to 8/31/1999	0.17*	62.05
Period Three				
Years 11-15	9/1/1999	to 5/18/2003	0.23	83.95
Period Four				
Years 16-20	5/19/2003	to 8/31/2009	0.17 *	62.05

\*Because actual withdrawal volumes have been significantly below allocated amounts and since there is insufficient water available in the basin to support increased withdrawals, the Department held the Town’s permitted withdrawal volumes throughout the remainder of this Modified Permit to the volume originally allocated for Period One.

If for any year beginning with calendar year 2004, the Town exceeds its total authorized volume of 0.60 mgd on an average annual daily basis, on or before March 1<sup>st</sup> of the following year, the Town shall submit to the Department for its review and approval a plan and schedule for implementing a water bank. Thereafter, the Town shall implement the water bank as approved by the Department.

At a minimum, this water bank shall provide for conserving at least two gallons of water within the basin for every additional gallon of water demand added to the system. This water bank requirement applies even if the Town exceeds its total authorized volume on an average annual daily basis by an amount that is less than the threshold volume. If the Town exceeds its total authorized volume on an average annual daily basis by more than the threshold amount, the Town will be in violation of the Water Management Act and this Modified Permit.

**2. Maximum Authorized Daily Withdrawal Volume**

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volume listed below without specific advance written approval from the Department.

Source	Source Code	Daily Rate in Million Gallons per Day (MGD)
North St. Well	3298000-01G	1.30

**3. Zone of Contribution (Zone II or Zone III) Delineations**

Department records show that the North Street Wellfield (3298000-01G) has a DEP approved Zone II delineation. Therefore, no further Zone II work is required as a condition of this Modified Permit.

**4. Wellhead Protection**

The Town has adopted a Groundwater Protection District bylaw that meets the requirements of 310 CMR 22.21(2), however, the Town has not implemented a floor drain bylaw. The Town shall submit a floor drain regulation, developed through the Board of Health, or a bylaw adopted by Town meeting, to the Department for review and approval by December 1, 2003, prior to being finalized by the Board of Health or adoption at Town meeting. The floor drain regulation approved by the Board of Health or the bylaw approved by Town meeting shall be submitted to the Department within 30 days of adoption.

**5. Wetlands Monitoring**

The Town has completed ten years of wetlands monitoring of the wetlands adjacent to the North Street wellfield. Based upon our review of the monitoring reports it appears that the reported wetness index has remained the same or is moving towards a slightly wetter condition, therefore the operation of the North Street well has not resulted in measurable impact to the wetlands adjacent to the North Street well. As a result the Department no longer requires monitoring of this wetland by the Town as a condition of this Modified Permit.

**6. Streamflow Triggers and Outside Water Use Restrictions**

Beginning on June 1, 2003, the Town shall implement the Required Actions identified in the following table whenever streamflow falls below the levels identified for 3 consecutive days as measured at the USGS Stream gauge noted.

Period	Streamflow Trigger (3 consecutive days below threshold)	Flow Volume (USGS USGS Ipswich Gauge Station 01102000)*	Required Action
May 1st thru September 30 <sup>th</sup>	< 0.56 cfs <sup>m</sup>	< 70.0 cfs	Public Notice for Voluntary Water Restrictions
May 1st thru September 30 <sup>th</sup>	<0.42 cfs <sup>m</sup>	<52.5 cfs	Implementation of Mandatory Water Restrictions

cfs<sup>m</sup> = cubic feet per second per square mile  
cfs = cubic feet per second

\* The streamflow thresholds set forth above are the daily mean streamflows recorded at the applicable USGS gauge. Should the reliability of flow measurements at the Ipswich Gauge Station be so impaired as to question its accuracy, the Modified Permit holder may request for the Department's review and approval that the trigger mechanism be transferred to the USGS South Middleton Gauge #01101500. The implementation of restrictions will be triggered by the same cfs<sup>m</sup> values that translate to a flow of 24.9 cfs for voluntary restrictions, and 18.7 cfs for mandatory restrictions. Should the Department become aware of concerns about the reliability of either gauge, it may upon immediate notification to the permit holder transfer the measurement point to the an alternate gauge. The Department reserves the right to require use of a different gauge.

Both Required Actions, voluntary or mandatory restrictions, require the filing of a public notice that must appear at a minimum in a local newspaper within 5 business days of the date that the required action is triggered. A copy of each notice as published shall be forwarded to the Department within 10 business days of publication. Each notice shall at a minimum include:

1. the streamflow value that triggered the required notification;
2. the need to limit water use, especially nonessential outside water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
3. ways individual homeowners can limit water use, especially nonessential outside water use; and
4. in the case of mandatory restrictions, a detailed description of the restrictions and the penalties for violating the restrictions.

At a minimum, mandatory restrictions shall limit nonessential outside water use to hand held hoses only and include hourly restrictions on nonessential outside water use. At a minimum, hourly restrictions shall avoid water use during the hours 9 a.m. to 5 p.m. when evapotranspiration rates are typically the highest. Notwithstanding the foregoing, irrigation of public parks and recreational fields by means of automatic sprinklers equipped with moisture sensors or similar control technology may also be permitted outside of the hours 9 a.m. to 5 pm. For purpose of this Modified Permit, the term nonessential outside water use is defined to include those uses that do not have health or safety impacts, are not required by regulation and are not needed to meet the core functions of a business or other organization. The Town shall have the authority to enforce mandatory restrictions, including the authority to assess penalties or impose fines for violations.

The Town shall implement, and in the case of mandatory restrictions, enforce the restrictions until streamflow exceeds for seven consecutive days the applicable streamflow threshold set forth in the table above.

In order to evaluate the effectiveness of the restrictions on nonessential outside water use, the Department requires that the Town submit with the Annual Statistical Report, a report documenting all actions taken by the Town to implement and enforce the restrictions on

nonessential outside water use, including without limitation the dates the restrictions on nonessential outside water use were in place, the streamflow threshold that triggered the restrictions, the restrictions imposed and the Town's efforts to enforce the restrictions including the names and addresses of those against whom action was taken and any fines or penalties imposed.

## **7. Ipswich River Basin Performance Standards**

Beginning calendar year 2004, Topsfield shall meet the following performance standards ("the Ipswich River Basin Performance Standards").

### **Performance Standard for Unaccounted for Water**

Unaccounted for water shall not exceed 10% of overall water use.

Topsfield's Annual Statistical Report shall provide a detailed assessment of its unaccounted for water. Unaccounted for water is defined by the Massachusetts Water Resources Commission as the difference between water pumped or purchased and water that is metered or confidently estimated. Unaccounted for water shall include water that cannot be accounted for due to meter problems, unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, stand pipe overflows and fire protection.

The need for water main flushing and the use of water in construction or meter calibration shall be metered or estimated as appropriate to assist in determining actual demand. Volumes flushed to waste shall be reported on the Town's Water Supply Annual Statistical Report.

### **Performance Standard for Residential Per Capita Water Use**

Residential Per Capita Water Use shall not exceed 65 gallons per day.

Topsfield shall report its residential gallons per capita per day (rgpcd) and the calculation used to derive that figure as part of its Annual Statistical Report. The rgpcd is the total volume of residential water use in gallons divided by the population served. The source of the data used to establish the service population and the year in which this data was developed shall be provided. If Topsfield fails to meet the performance standard for keeping residential per capita water use at or below 65 gallons per day, the Department may require the Town to implement restrictions on nonessential outside water use that are more stringent than the restrictions set forth in Special Condition #6.

### **Performance Standard for Seasonal Water Use**

Water use between May 1<sup>st</sup> and September 30<sup>th</sup> shall not exceed the seasonal cap of 84.15 million gallons. To stay within this cap Topsfield shall keep its water use at or below an average daily volume of 0.55 MGD from May 1<sup>st</sup> thru September 30<sup>th</sup>. If the Town exceeds this seasonal cap, the Department may require the Town to implement more stringent restrictions on nonessential outside water use than those set forth in Special Condition #6.

### **Performance Standard for Restricting the Use of Unregulated Irrigation Wells**

The Department has been informed that within the Ipswich River Basin there has been an increase in the number of wells that are not subject to regulation under the Water Management

Act and are used in whole or in part for irrigation purposes (hereinafter “unregulated irrigation wells”). To avoid a further increase in the number of such wells, the Department determined that because of the stressed nature of the Ipswich River, it is appropriate that the communities located in the Ipswich River Basin make the use of unregulated irrigation wells subject to the restrictions on nonessential outside water use that are triggered by streamflow thresholds, that are required by this Modified Permit, and that apply to customers of the public water system.

The Department requires that the Town submit, with the Annual Statistical Report, a report documenting all actions taken by the Town to make unregulated irrigation wells subject to the restrictions on nonessential outside water use triggered by streamflow thresholds, that are required by this Modified Permit, and that apply to customers of the public water system, including any actions taken to enforce these restrictions against the owners or operators of unregulated irrigation wells and any fines or penalties imposed. If, in any calendar year beginning 2005, Topsfield, on or before May 1<sup>st</sup> of that year, fails to restrict the use of unregulated irrigation wells as provided herein, the Town shall implement and enforce the restrictions on nonessential outside water use triggered by the streamflow thresholds set forth below in place of the streamflow thresholds set forth in Special Condition #6.

Period	Streamflow Trigger (3 consecutive days below threshold)	Flow Volume (USGS Ipswich Gauge Station #01102000)	Required Action
May 1st thru September 30 <sup>th</sup>	< 0.56 cfs	< 70.0 cfs	Public Notice for Voluntary Water Restrictions
May 1st thru September 30 <sup>th</sup>	<0.42 cfs	<52.5 cfs	Implementation of a Total Non-Essential Outside Water Ban

cfs = cubic feet per second per square mile  
cfs = cubic feet per second

## **8. Enhanced Water Conservation Plan**

If, in any year beginning with calendar year 2004, Topsfield fails to comply with the Performance Standards for Residential Per Capita Water Use and/or Seasonal Water Use, the Town shall develop and implement an enhanced water conservation plan for the following calendar year. For any year in which the Town is required to develop and implement an enhanced water conservation plan, the Town shall submit along with the Annual Statistical Report a report documenting all actions taken by the Town to develop and implement the enhanced water conservation plan.

The enhanced water conservation plan may include without limitation the items listed below:

- Adoption and enforcement of a bylaw or regulation to require moisture sensors or similar control technology on automatic sprinklers;
- Adoption and enforcement of a bylaw or regulation to limit the amount of land clearing for the creation of lawns;
- Adoption and enforcement of a bylaw or regulation to promote infiltration of stormwater to recharge groundwater at a rate 1.5 times the volume of recharge for new development projects and a rate of 1.0 times the volume of recharge for redevelopment projects for the appropriate hydrologic group as identified in Standard 3 of the DEP Stormwater Management Standards;
- Irrigation of recreational fields and public parks in accordance with the Water Resources Commission’s May 2002 Guide to Lawn and Landscape Water Conservation;

- Encouragement of the use of cisterns or rain barrels for outside watering thru the use of a rebate or at cost program;
- Enhanced public education outreach; and/or
- Purchase and/or development of out- of- basin sources.

At a minimum, the enhanced water conservation plan shall meet the requirements set forth below.

- If Topsfield fails to comply with the performance standard for keeping residential per capita water use at or below 65 gallons per day, the enhanced water conservation plan shall include the implementation of a program to make water saving devices such as faucet aerators, low flow shower heads and toilet displacement bottles/dams available to its customers at cost and to provide rebates or other incentives for the purchase of low flow appliances (washing machines, dish washers and toilets), and the installation of moisture sensors or similar control technology on irrigation systems.
- Any enhanced water conservation plan required by this Modified Permit shall include (1) submission of a report that evaluates the effectiveness of a differential rate for seasonal water use as a tool for encouraging water conservation, (2) implementation of any changes to the current rate structure that will enable the Town to encourage water conservation such as in a differential rate for seasonal water use, and (3) notification to the Department of the changes along with the reason for these changes.

## **9. Control of Unaccounted for Water**

At a minimum, the Town shall take the actions listed below to meet the performance standard for keeping unaccounted for water at or below 10%.

### **Metering**

100 percent of the system (including public buildings and facilities) shall be equipped with meters of proper size and accuracy to measure water flow within 2% accuracy.

On or before December 31, 2003, the Town shall submit to the Department a plan and schedule for ensuring that all service meters accurately measure within 2 % the volume of water used by the Town's customers. At a minimum, the plan shall include the provision of sufficient funds in the annual Water Department budget to recalibrate, repair or replace meters as needed. Thereafter, the Town shall implement the program.

The Town shall continue to calibrate all master meters on an annual basis.

### **Leak Detection**

The Town shall continue to conduct a full leak detection survey every year.

### **Leak Repair**

The Town shall have repair reports available for inspection by the Department.

Leaks shall be repaired as soon as possible including leaks in any water pipes up to the service meter. In no event, shall any leak remain unrepaired for more than seven days after detection.

**10. Requirement to Report Raw and Finished Water Volumes**

Topsfield shall report on the Annual Statistical Report both the raw and finished water volumes for the entire water system. Raw water volumes shall also be reported for individual sources.

**11. Commercial and Industrial Conservation Program**

The Department has determined that the Town does not need to implement a special program to reduce water use by its ten (10) largest industrial and commercial customers since the amount of commercial and industrial use is substantially less than residential, municipal and institutional (school) use. Resources will be better spent on reducing seasonal water use and residential gallons per capita per day.

**12. General Conservation Requirements**

Pricing

The Town shall continue to ensure that water supply system operations are fully funded by water supply system revenues. The pricing system should at least reflect the full cost of supplying water, including but not limited to:

- Administrative costs;
- Staff salaries, benefits, insurance and pension costs;
- Distribution system operation, maintenance and repair, including leak detection and repair costs and metering costs;
- Pumping costs and utilities;
- Treatment costs;
- Capital replacement costs, capital depreciation and debt service;
- Costs incurred by the public water system for water conservation programs and public education programs;
- Watershed or wellhead purchase and/or protection costs and land acquisition;
- Emergency planning.

Plumbing

- o The Town shall enforce the March 1, 1989 plumbing code for new construction and building rehabilitation where installation of water saving devices and low flow toilets is required.
- o Public buildings shall be retrofitted with water saving devices (such as faucet aerators, low flow shower heads, toilet displacement bottles/dams, low flow toilets, and automatic shut off faucets).
- o The Town shall submit to the Department, in writing by December 31, 2003, an accounting of all public buildings and their status of compliance with this condition. If any buildings are not retrofitted with water saving devices, the Town shall submit a report and schedule identifying how they plan to complete the retrofitting by December 31, 2005. Thereafter the Town shall implement the plan and schedule.
- o On or before December 31, 2005 the Town shall complete the retrofit of all public buildings and notify the Department in writing that the retrofit is complete.



### Education

- o The Town shall continue its current public education program. The Water Department shall continue to provide its customers with data emphasizing:
  - all the costs of providing water;
  - that investments in efficiency and conservation will provide consumers with long-term savings;
  - how water use fluctuates throughout the year; and
  - the environmental benefits of reducing water demand.

Bill stuffers with water conservation tips or water saving messages shall, at a minimum, be included annually with customer's water bills, or as a separate mailing. Copies of this information shall be made available to the Department upon request.

### GENERAL CONDITIONS

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this Modified Permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw up to the authorized volume so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property for the purpose of determining compliance with this Modified Permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this Modified Permit are subject to restriction in any water emergency declared by the Department pursuant to MGL c 21G ss 15-17, MGL c 150 ss 111, or any other enabling authority.
5. **Transfer of Permits** This Modified Permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The permittee shall submit annually, on a form provided by the Department, a certified statement of the withdrawal, such report to be received by the Department by January 31st of each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection  
Water Management Program  
One Winter Street, 6th Floor  
Boston, MA 02108

7. **Duty to Maintain Records** The permittee shall be responsible for maintaining monthly withdrawal records.
8. **Metering** All withdrawal points included within the permit shall be metered. Master meters shall be calibrated annually.

#### **APPEAL RIGHTS AND TIME LIMITS**

This permit modification is a decision of the Department. Any person aggrieved by this decision may request an adjudicatory hearing under the provisions of M.G.L. c. 30A. Any such request must be made in writing, by certified mail and received by the Department within twenty-one (21) days of the date of receipt of this Modified Permit. Only the portions of this Modified Permit that reflect a modification of the Town's current permit may be the subject of an appeal, as the period for appealing provisions within the Town's current permit has expired.

No request for an appeal of this Modified Permit shall be validly filed unless a copy of the request is sent by certified mail, or delivered by hand to the local water resources management official in the city or town in which the withdrawal point is located; and for any person appealing this decision, who is not the permit holder, unless such person notifies the permit holder of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

#### **CONTENTS OF HEARING REQUEST**

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. For any person who is not the permit holder, the request must include a clear and concise statement of how that person is aggrieved by the issuance of this Modified Permit.

#### **FILING FEE AND ADDRESS**

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, Ma. 02211

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

#### **EXEMPTIONS**

The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

#### **WAIVER**

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department that the fee will create an undue financial hardship. A person, seeking a

waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.

**NO WITHDRAWAL AUTHORIZED HEREIN SHALL EXCEED THE SAFE YIELD OF THE BASIN AS DETERMINED BY THE DEPARTMENT.**

**NO WITHDRAWAL IN EXCESS OF 100,000 GALLONS PER DAY OVER THE REGISTERED VOLUME (if any) SHALL BE MADE FOLLOWING THE EXPIRATION OF THIS MODIFIED PERMIT, UNLESS BEFORE THAT DATE THE DEPARTMENT HAS RECEIVED A RENEWAL PERMIT APPLICATION PURSUANT TO 310 CMR 36.00.**